

IN THE CLAIMS:

Please add the following new claims:

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--19. A flexible catheter for prolonged vascular access, the catheter comprising: an elongate flexible and tubular body having a proximal portion, a distal portion and a permanently curved portion linking the proximal and distal portions so that the curved, the proximal and the distal portions lie naturally in essentially the same plane with the angle contained between the proximal and distal portions being less than 90°, and a septum extending continuously through said portions and lying substantially at right angles to said plane to divide the tubular body into generally D-shaped intake and outlet lumens; intake and outlet tubes coupled to the proximal portion at a proximal end of the body remote from the curved portion to receive incoming fluid from the intake lumen and to supply outgoing fluid to the outlet lumen; and a tip formed on the distal end of the distal portion and including at least one intake opening for receiving the incoming fluid and at least one outlet opening for returning the outgoing fluid.

20. The flexible catheter of claim 19 in which said portions are round in cross-section.

21. The flexible catheter of claim 20 in which the diameter of the proximal portion is greater than the diameter of the distal portion.

22. The flexible catheter of claim 21 further comprising a cuff of fibrous material surrounding the body where the proximal portion meets the curved portion.

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23. The flexible catheter of claim 20 further comprising a cuff of fibrous material surrounding the body where the proximal portion meets the curved portion.

24. The flexible catheter of claim 19 further comprising a cuff of fibrous material surrounding the body where the proximal portion meets the curved portion.

25. The flexible catheter of claim 19 in which the tip includes an extension blending smoothly into the body and forming an extension to the outlet lumen.

26. The flexible catheter of claim 25 in which the at least one intake opening is at a side of the distal portion facing the proximal portion, and in which the extension is at a side of the distal portion remote from the proximal portion.

27. The flexible catheter of claim 26 in which said portions are round in cross-section.

28. The flexible catheter of claim 27 in which the diameter of the proximal portion is greater than the diameter of the distal portion.

29. The flexible catheter of claim 28 in which said angle is in the range of 0°-20°.

30. The flexible catheter of claim 26 further comprising a cuff of fibrous material surrounding the body where the proximal portion meets the curved portion.

31. The flexible catheter of claim 19 in which the at least one intake opening is at a side of the distal portion facing the proximal portion, and in which the outlet opening is at a side of the distal portion remote from the proximal portion.

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32. The flexible catheter of claim 31 in which said portions are round in cross-section.

33. The flexible catheter of claim 32 in which the diameter of the proximal portion is greater than the diameter of the distal portion.

34. The flexible catheter of claim 33 in which said angle is in the range of 0°-20°.

35. The flexible catheter of claim 31 further comprising a cuff of fibrous material surrounding the body where the proximal portion meets the curved portion.

36. The flexible catheter of claim 19 in which the distal portion is sufficiently flexible to be deformed readily to follow the shape of a vein after entry, and in which the proximal portion is more rigid than the distal portion.

37. The flexible catheter of claim 19 in which said angle is in the range of 0° to 20°.

38. A flexible catheter for prolonged vascular access, the catheter comprising: an elongate flexible and tubular body having a proximal portion, a distal portion and a permanently curved portion linking the proximal and distal portions so that the curved, the proximal and the distal portions lie naturally in essentially the same plane with the angle contained between the proximal and distal portions being less than 90°; intake and outlet tubes coupled to the proximal portion at a proximal end of the body remote from the curved portion to receive incoming fluid from the intake lumen and to supply outgoing fluid to the outlet lumen; and a tip formed on the distal end of the distal portion